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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/518,234 | 12/16/2004 | Akira Shirakawa | 046124-5333 | 2723 |

55694 7590 10/10/2006

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| EXAMINER |
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ROGERS, KELLY A

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| ART UNIT | PAPER NUMBER |
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2828

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|-------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/518,234 | Applicant(s) SHIRAKAWA ET AL. | |
| | Examiner Kelly A. Rogers | Art Unit 2828 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>20050822, 20050201, 20041216</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being taught by Kozlov, V. A. et al., All-fiber coherent beam combining of fiber lasers, Optics Letters, December 15, 1999, Vol. 24, No. 24, pages 1814 to 1816.

As to claim 1, Kozlov et al. teaches a fiber laser unit comprising a plurality of fiber lasers that generate laser beams by exciting a laser active substance inside cores by exciting light, propagate the laser beams inside the cores and output from the ends thereof, wherein each of the fiber lasers has a resonator structure that reflects a laser beam on both ends, and the cores of the fiber lasers are made proximal to each other at a part, and by using a laser beam outputted from the inside of the core of an arbitrary fiber laser, injection synchronization is carried out inside resonators of other fiber lasers [second paragraph].

As to claim 2, Kozlov et al. teaches each of the fiber lasers has a structure in which a part of the cores is reduced in diameter, and the cores are made proximal to each other at the core diameter reduced portion [figure 3 (a)].

As to claim 3, Kozlov et al. teaches the diameter reduced portion and the proximity portion are formed by an optical fiber coupler [figure 3's explanation].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlov et al. as applied to claims 1-3 above, and further in view of Shirakawa et al., "Coherent addition of Fiber lasers by use of a fiber coupler," Optics Express, Optical Society of America, Vol. 10, No. 21, October 21, 2002, pp. 1167-1172.

Kozlov et al. teaches all of the characteristic features of the present invention as recited above.

However Kozlov et al. fails to disclose among the plurality of fiber lasers, a loss is applied to ports of the fiber lasers except for one fiber laser.

Shirakawa et al. teaches among the plurality of fiber lasers, a loss is applied to ports of the fiber lasers except for one fiber laser [page 1171].

It would have been obvious to one of ordinary skill in the art to modify the apparatus disclosed by Kozlov et al. by incorporating the feature disclosed by Shirakawa et al.

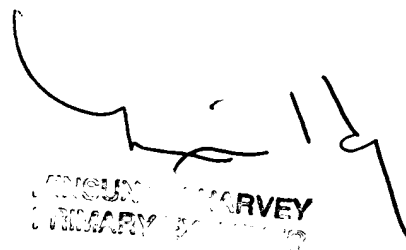
One would have been motivated to make this modification in order to increase the addition efficiency as implied by Shirakawa et al. [page 1171].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly A. Rogers whose telephone number is 571-272-8047. The examiner can normally be reached on Monday through Friday 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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